Preliminary Data Report for Stormwater Runoff Samples Collected in Los Alamos Canyon downstream of the new Sediment Retention Structure on 7/21/00

A significant precipitation event occurred over the eastern flank of the Jemez Mountains on the evening of July 18, 2000. Stormwater runoff and runoff debris collected in the Los Alamos Reservoir in upper Los Alamos Canyon and caused the outflow culverts to plug, which did not allow water to flow from the reservoir downstream. The debris was removed from the outflow culverts the next day, on July 19, 2000, and water was allowed to drain from the reservoir into Los Alamos Canyon. The water released from the reservoir passed through stream gage E042 (Los Alamos Canyon at Los Alamos), which is located upstream of SR-4 near the Laboratory boundary.

Figure 1 shows the hydrograph of the streamflow measured at gage E042. Discharge passed through the stream gage during the precipitation event and about one day later after the reservoir was allowed to discharge. The discharge from the reservoir passed through the gage for about 2 days. The discharge from this stream gage entered the construction site for the low-head weir retention pond, which at the time was being constructed in lower Los Alamos Canyon just upstream of State Route 4. The ponded water hindered construction activities and was pumped from the retention pond structure around the low-head weir into Los Alamos Canyon downstream of the structure.

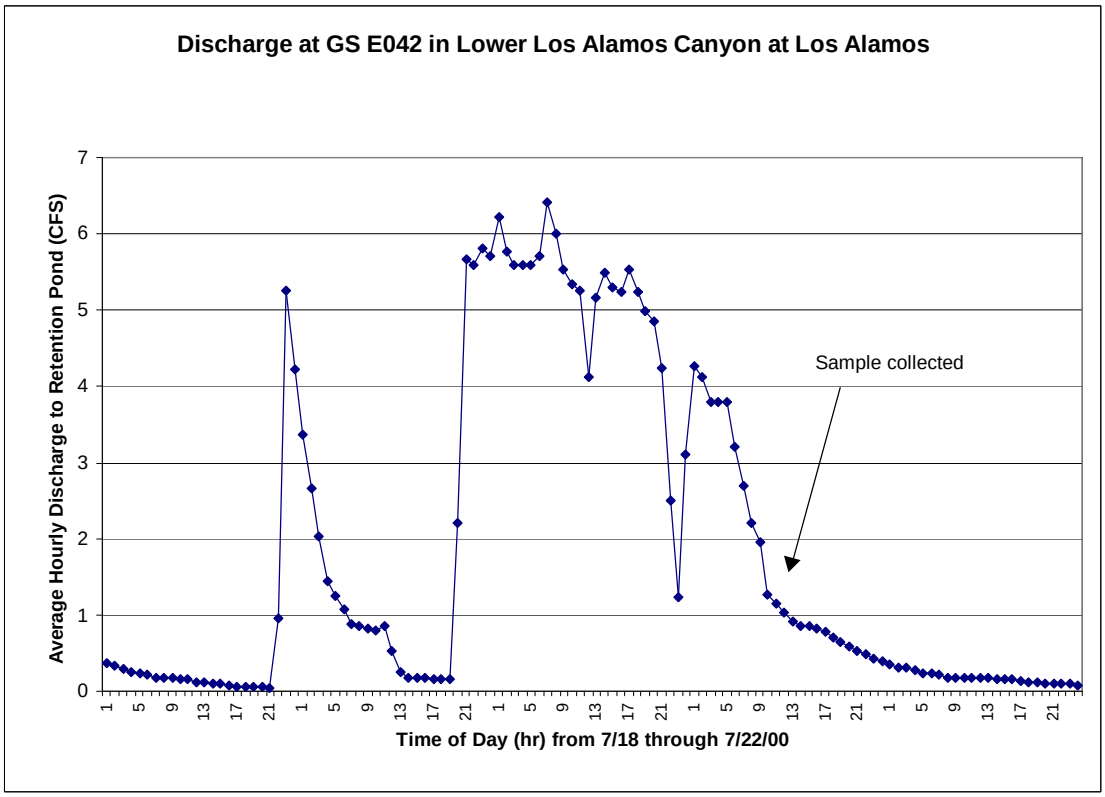

Figure 1. Hydrograph of streamflow at gage E042 in Los Alamos Canyon above State Route 4

In compliance with discharge requirements, a grab sample of the discharged water was collected from Los Alamos Canyon downstream of the retention pond and near State Route 4 at 11:19 am on July 21, 2000. The water samples may be considered to be stormwater runoff, however a portion of the runoff was temporarily retained in Los Alamos Reservoir in the upper part of the canyon and again in the retention pond near SR-4 before being pumped into lower Los Alamos Canyon and discharged off site.

Both filtered and unfiltered samples of the runoff were obtained for analysis. The samples were sent to General Engineering Laboratories, Inc. in Charleston, South Carolina for analysis for radionuclides, metals, general inorganic constituents, SVOCs, and PCBs. Preliminary results of the available analyses are shown in Table 1. Also shown on Table 1 are the maximum values of constituents that have been recorded in filtered and unfiltered runoff collected from Los Alamos Canyon near State Route 4 before the Cerro Grande Fire (1995 through 1999), and the DOE Public Dose Derived Concentration Guides (DCGs), for comparison purposes. Results of gamma spectroscopy are reported for Cs-137 and radionuclides that were detected in concentrations above the detection limit.

A summary of the preliminary results of the available analyses is shown in Figure 2. The results are compared with the historic pre-fire maximum values obtained for filtered and unfiltered runoff in Los Alamos Canyon and the DOE DCGs for ingested water. The preliminary results of the analyses for radionuclides in the stormwater runoff samples collected on July 21, 2000 are below the historic pre-fire maximum values obtained and are well below the DOE DCGs for each analyte obtained to date.

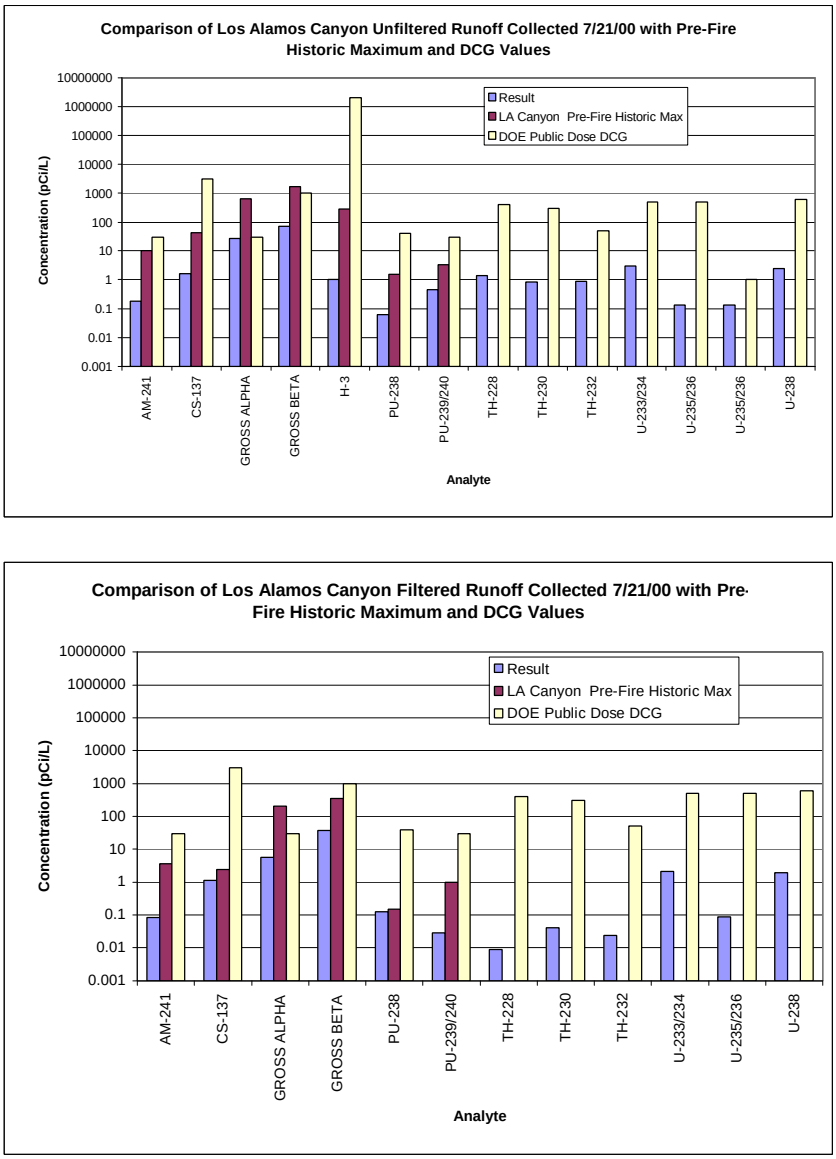

Figure 2. Comparison of Los Alamos Canyon runoff collected 7/21/00 with Pre-Fire Historic Maximum and DCG Values